M/053/005

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UT-047

MEMORANDUM

TO: Area Manager, Dixie Resource Area

FROM: Natural Resource Specialist, Dixie Resource Area

SUBJECT: Review of Tenneco's Revised Plan of Operations for Goldstrike Mine

I have made an initial review of Tenneco's revised plan of operation (PAO) and the revised EA prepared by JBR consultants. It is my recommendation that neither document meets the appropriate regulatory standards. Specifically sections 3809.1-5(c) 5 and 3809.1-3(d) and the National Environmental Policy Act Handbook H 1790-1 Chapter IV(B)(2)(a). The rationale for my conclusions is provided below:

Plan of Operations

1. There is no mention of the causes of several recent "spills" of hazardous materials nor any corrective actions to be taken under the revised POO.

2. No mention is made of the stock piling of slash as directed in our letter of March 29, 1989.

3. No mention is made of the coverage of ditches containing cyanide solution. Letter from D. Wayne Hadberg, UDOG&M dated 6/6/1990.

4. I am unable to tell which pits will be excavated below the static water table.

5. The POO contains no mention of the water pipeline currently authorized as a modification to the original POO approved on 7/28/88.

6. No mention is made of the communication site used in current operations.

7. No mention is made of the resolution of the slippage problem presented by the east wall of the Padre Pit. (IN ORIGINAL PLAN)

8. The revised plan directs water flow and leach pad drainage down natural channels avoiding the east sediment pond.

9. The plan would place a heap leach pond within a natural drainage.

- LEACH PAD 3:1 SLOPES AT FINAL RECLAMATION

10. The 1988 POO maps indicate that the Padre Pit would hold water. How can the pit be enlarged without increasing the surface water exposure?

11. Will the pits be lower than the static water table as identified in the ground water testing program.

12. The POO lacks a reference to the hazardous material permit. Who issued it? What are the restrictions. (BLM Manual)

13. A safety concern is generated by the statement on pg. 34 that pit slopes will be " stable for the life of the operation, (2 years), and for some time afterward." Leaving unstable highwalls would seem improper.

14. The plan as proposed would place contaminated material in a natural drainage

15. Why would it be best to bury used culverts in the pit? (pg. 33)

16. The sediment pond that currently provides the bulk of the sediment protection is located on private lands. What assurance is there it will be left in place?

17. Why cannot reclamation be continuous with operations when water is available for reclamation. This action would provide a test of the anticipated revegetative success.

1. Cannot construction schedules be adjusted to fill all but one pit?

2. No mention is made of the water pipeline which is a part of the original plan of operations.

3. How will the facilities to control waterflow and sediment be maintained and by whom?

Environmental Assessment

Although not obligated to do so, Tenneco hired a contractor (JBR) to prepare an EA on the revised plan. the document was reviewed and found to be inadequate for our purposes. Thus it is now our responsibility to either prepare our own supplement or convince Tenneco to revise the environmental document.

The EA basically rubber stamps Tenneco's proposed operation. It fails to provide the independent evaluation necessary to determine if what is being proposed causes unreasonable or unnecessary damage to public lands.

Specifically:

1. It fails to address alternatives to utilizing the natural drainage in Quail Canyon for a heap leach pad.

2. It assumes that the steep slopes up to 33.7 degrees can be successfully revegetated. (In light of the fact that only 6 inches of top soil is available with a rainfall of 12 inches per year, such an assumption appears improper). Our experience suggests that a slope ration of 3 to 1 is normally necessary for successful revegetation.

3. If fails to determine if the proposed sediment control structures are adequate to prevent sediment from reaching the east fork of the Beaver Dam Wash.

4. It fails to determine if a 5 PPM cyanide runoff poses a danger to the spinedace habitat. (.016 mg/L is lethal)

5. Methods to isolate the heap leach pads from surface and underground flow should be examined.

6. It fails to mitigate the public health hazard posed by the 320 ft. high wall and the reported instability of the east wall of the Padre Pit.

7. The ground water discussion should be tied to the test drilling report in the POO.

8. The maintenance of the ditches, silt fences, and sediment dam for the next 10 years should be addressed.

9. Information on the proposed dam is not in sufficient detail to reach the conclusion that it would " permanently hold water."

10. All disturbance should be reclaimed.

11. What is the likelihood of a heavy metals problem?

12. Information on monitoring wells is not provided.

Bonding

Under the new bonding policy established by the Director (8/19/90), we are to require a 100% bond for operations utilizing cyanide for all lands effected by this toxic material. According to the news release the maximum bond that can be required is $2,000 per acre or in Tenneco's case $440,000. Unfortunately our own reclamation estimates of $1.50 per linear ft. of road and 8.000 acre (personal communications with Scott Haight of Lewistown D.O.) far exceed the limits set forth in the Director's policy statement. A $1,760,000 bond would be needed to insure adequate reclamation of the site.

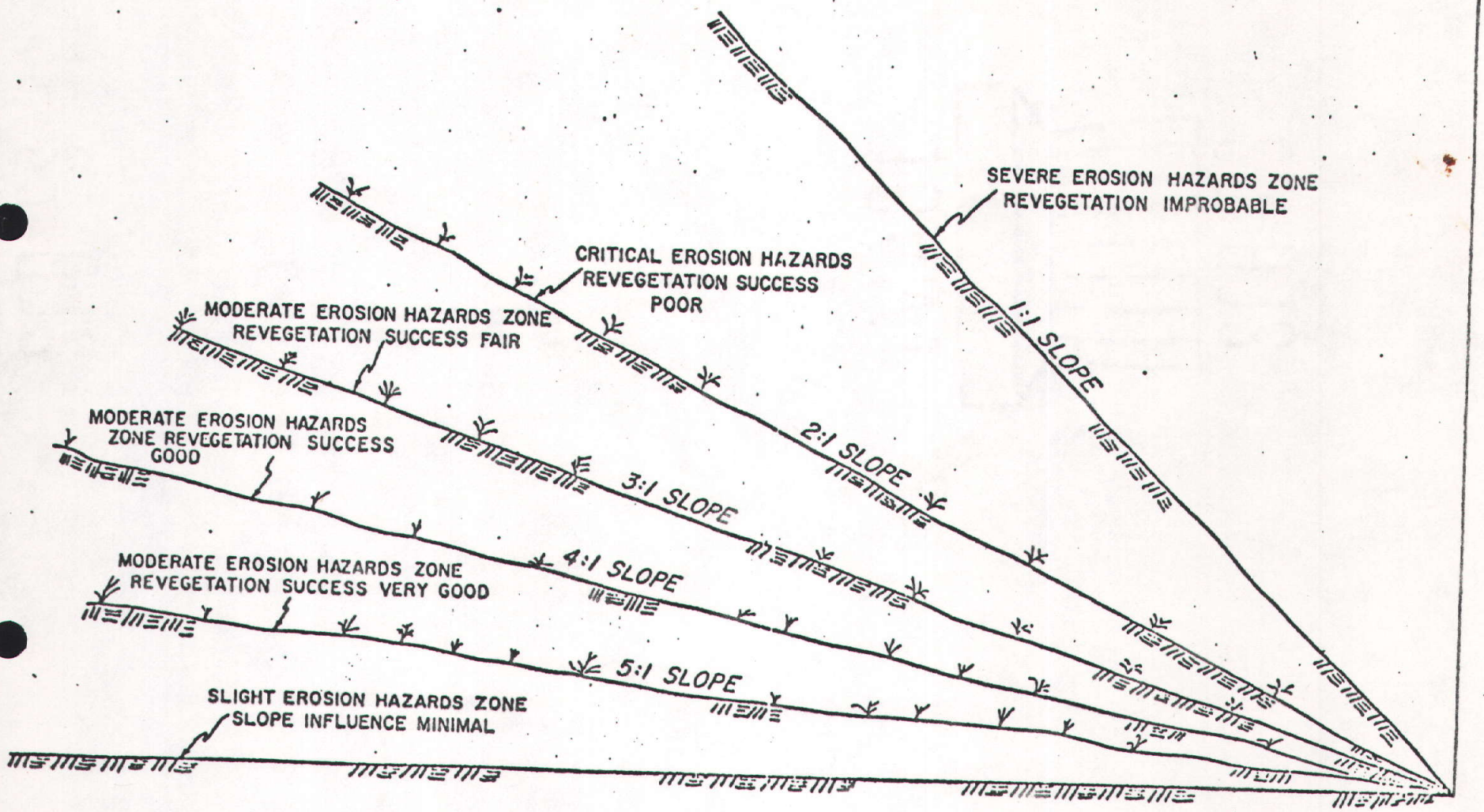
Can we require a bond larger than the $2,000 per acre?

Recommendations

Basically what I expected to see was:

A. corrective activities to resolve the 'spills'
B. an operational procedure that ends up with only one unreclaimed pit
C. all disturbances draining into a sediment pond
D. no leach ponds located in natural drainage with any natural flow diverted ~~divided~~ around such areas
E. an ongoing reclamation process utilizing the option of irrigation.
F. efforts made to insure the indefinite maintenance of any necessary ditch and debris basins
G. testing ~~Use~~ of the best subsoil as a top soil additive
H. no respreading of top soil on slopes greater than 3/1 to FIND

2. Agree with Co. that mitigation measure 2(c) should be deleted as impractical.



INFLUENCE OF PERCENT SLOPE
ON REVEGETATION.